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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/594,721	06/16/2000	Yuji Yamamoto	048369/0117	2350

22428 7590 06/03/2003

FOLEY AND LARDNER
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

RUDE, TIMOTHY L

ART UNIT PAPER NUMBER

2871

DATE MAILED: 06/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/594,721

Applicant(s)

YAMAMOTO ET AL.

Examiner

Timothy L Rude

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant is advised that the Notice of Allowance mailed 25 February 2003 is vacated. If the issue fee has already been paid, applicant may request a refund or request that the fee be credited to a deposit account. However, applicant may wait until the application is either found allowable or held abandoned. If allowed, upon receipt of a new Notice of Allowance, applicant may request that the previously submitted issue fee be applied. If abandoned, applicant may request refund or credit to a specified Deposit Account.

Prosecution on the merits of this application is reopened on claims 1, 2, and 4-16 considered unpatentable for the reasons indicated below:

The indicated allowability of claims 1, 2, and 4-16 is withdrawn in view of the newly discovered reference(s) to Seiki et al (Seiki) Japanese Abstract Publication 10-096955 provided by Applicant in paper number 12.

Rejections based on the newly cited reference(s) follow.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurauchi et al (Kurauchi) USPAT 5,917,572 in view of Seiki et al (Seiki) Japanese Abstract Publication 10-096955 provided by Applicant.

As to claim 1, Kurauchi discloses in Figure 22 a liquid-crystal display panel comprising: a plurality of pixels; and a columnar spacer, 204, formed and disposed on a portion of a surface of a multi-layered film, said films, 183 and 184, formed on a surface of a substrate facing a transparent electrode provided in at least a part of pixels, 188, among a plurality of pixel portions forming a liquid-crystal display panel, said portion of said multi-layered film having little variation in thickness (as illustrated) (col. 17, line 25 through col. 18, line 16).

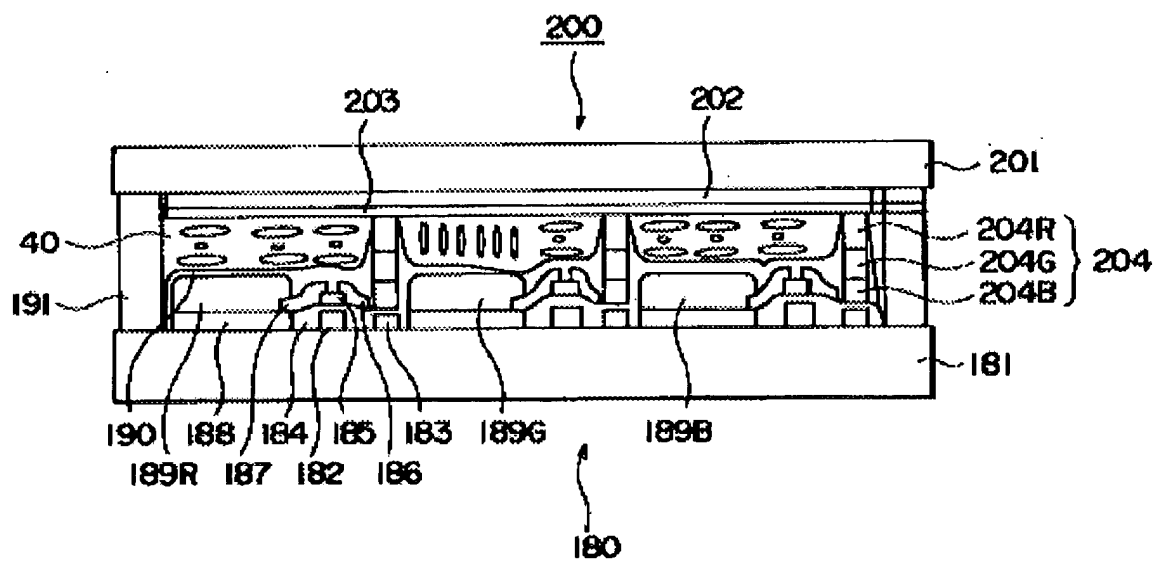


FIG. 22

Kurauchi does not explicitly disclose said columnar spacer formed on a transparent electrode in a contact hole.

Seiki teaches in Drawing 4 the placement of a columnar spacer, 26, on a transparent ITO pixel electrode film, 23, that is in the contact hole for a capacitor [0029] to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display (Abstract).

Seiki is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to place columnar spacers on a transparent ITO pixel electrode films that are in the contact holes for a capacitors to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Kurauchi with

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the columnar spacers on a transparent ITO pixel electrode films that are in the contact holes for a capacitors to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display.

3. Claims 1, 2, and 4-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al (Miyazaki) USPAT 5,757,451 in view of Seiki.

As to claims 1, 2, and 4, Miyazaki discloses, in Figures 2 and 3, a liquid-crystal display panel comprising: a plurality of pixels; and a columnar spacer, 58r, 58g, and 58b, formed and disposed on a portion of a surface of a multi-layered films, 52, 53, 54, 55, and 56, formed on a surface of a substrate, 51, facing to a transparent electrode provided in at least a part of pixels, 61, among a plurality of pixel portions forming a liquid-crystal display panel and said portion of said multi-layered film having little variation in thickness (col. 6, line 32 through col. 9, line 18).

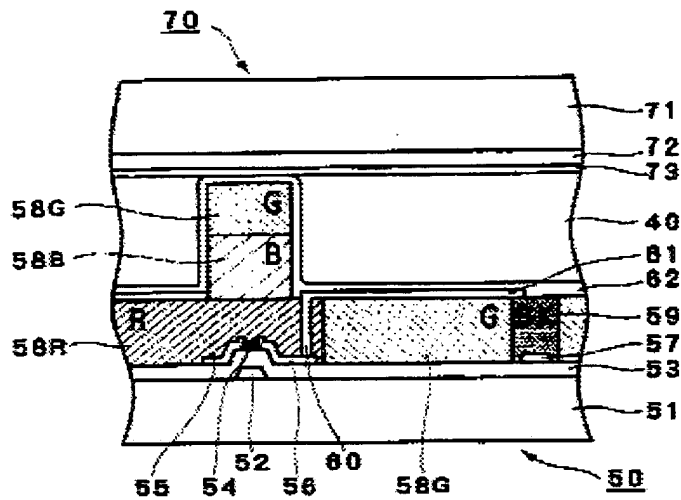


FIG. 2

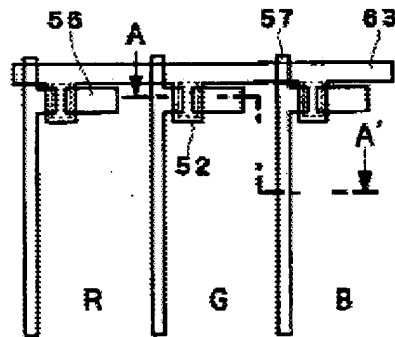


FIG. 3

Miyazaki does not explicitly disclose said columnar spacer formed on a transparent electrode in a contact hole.

Seiki teaches in Drawing 4 the placement of a columnar spacer, 26, on a transparent ITO pixel electrode film, 23, that is in the contact hole for a capacitor [0029] and passes through a transparent electrode film, 23 (meets limitations of claim 4) to

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provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display (Abstract).

Seiki is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to place columnar spacers on a transparent ITO pixel electrode films that are in the contact holes for a capacitors to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Miyazaki with the columnar spacers on a transparent ITO pixel electrode films that are in the contact holes for a capacitors to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display.

As to claim 5, Miyazaki discloses, in Figure 2, a liquid-crystal display panel according to claim 1, wherein said columnar spacer is made of a material selected from a group consisting of an organic resist material (col. 5, line 3 through col. 9, line 18).

As to claim 6, Miyazaki discloses, in Figure 2, a liquid-crystal display panel according to claim 1, wherein the type of said liquid-crystal display panel is one type selected from a group consisting of a color type (col. 6, line 32 through col. 9, line 18).

As to claim 7, the method for manufacturing a liquid-crystal display panel comprising: forming in each of a plurality of pixel regions on a substrate a color film, a signal electrode, a gate electrode, and a pixel electrode; forming a transparent electrode

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film thereover; then forming a columnar spacer on said transparent electrode film minimally in a part of contact holes provided on said pixel regions; and then disposing an opposing substrate on which is formed an opposing common transparent electrode so as to oppose said transparent electrode film is obvious given the structure of Miyazaki (Figures 2 and 3, and col. 5, line 3 through col. 9, line 18).

Miyazaki does not explicitly disclose said columnar spacer formed on a transparent electrode in a contact hole.

Seiki teaches in Drawing 4 the placement of a columnar spacer, 26, on a transparent ITO pixel electrode film, 23, that is in the contact hole for a capacitor [0029] to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display (Abstract).

Seiki is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to place columnar spacers on a transparent ITO pixel electrode films that are in the contact holes for a capacitors to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Miyazaki with the columnar spacers on a transparent ITO pixel electrode films that are in the contact holes for a capacitors to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display.

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As to claims 8 and 13, the method for manufacturing a liquid-crystal display panel comprising: forming in each of a plurality of pixel regions on a substrate a color film, a signal electrode, a gate electrode, and a pixel electrode; then forming a columnar spacer on said transparent electrode film minimally in a part of contact holes provided on said pixel regions; forming a transparent electrode film on said color film, signal electrode, gate electrode, and pixel electrode, with the exception of said columnar spacer; and then disposing an opposing substrate on which is formed an opposing common transparent electrode so as to oppose said transparent electrode Film, with interposing said columnar spacer therebetween is obvious given the structure of Miyazaki (Figures 2 and 3, and col. 5, line 3 through col. 9, line 18).

Miyazaki does not explicitly disclose said columnar spacer formed on a transparent electrode in a contact hole.

Seiki teaches in Drawing 4 the placement of a columnar spacer, 26, on a transparent ITO pixel electrode film, 23, that is in the contact hole for a capacitor [0029] to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display (Abstract).

Seiki is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to place columnar spacers on a transparent ITO pixel electrode films that are in the contact holes for a capacitors to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the method of Miyazaki with

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the columnar spacers on a transparent ITO pixel electrode films that are in the contact holes for a capacitors to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display.

As to claim 9, Miyazaki teaches the use of a columnar spacer made of a material selected from a group consisting of an organic resist material (col. 5, line 3 through col. 9, line 18).

As to claims 10-12, Miyazaki in view of Seiki disclose the display of claim 1.

Miyazaki does not explicitly disclose a display wherein said portion of said multi-layer films is 0.1 μm to 0.2 μm , several tens of angstroms, or several hundreds of angstroms.

Seiki teaches in Drawing 4 the placement of a columnar spacer, 26, on a transparent ITO pixel electrode film, 23, that is in the contact hole for a capacitor [0029] to provide stable auxiliary capacity value and obtain a uniform gap (Applicant's said portion of said multi-layer films is 0.1 μm to 0.2 μm , several tens of angstroms, or several hundreds of angstroms) between substrates to achieve a good display (Abstract).

Seiki is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to place columnar spacers on a transparent ITO pixel electrode films that are in the contact holes for a capacitors to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display.

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Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the method of Miyazaki with the columnar spacers on a transparent ITO pixel electrode films that are in the contact holes for a capacitors to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display.

As to claims 14-16, Miyazaki in view of Seiki disclose the method of claim 13.

Miyazaki does not explicitly disclose a display wherein said portion of said multi-layer films is 0.1 μm to 0.2 μm , several tens of angstroms, or several hundreds of angstroms.

Seiki teaches in Drawing 4 the placement of a columnar spacer, 26, on a transparent ITO pixel electrode film, 23, that is in the contact hole for a capacitor [0029] to provide stable auxiliary capacity value and obtain a uniform gap (Applicant's said portion of said multi-layer films is 0.1 μm to 0.2 μm , several tens of angstroms, or several hundreds of angstroms) between substrates to achieve a good display (Abstract).

Seiki is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to place columnar spacers on a transparent ITO pixel electrode films that are in the contact holes for a capacitors to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the method of Miyazaki with

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the columnar spacers on a transparent ITO pixel electrode films that are in the contact holes for a capacitors to provide stable auxiliary capacity value and obtain a uniform gap between substrates to achieve a good display.

Conclusion

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 24 February 2003 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (703) 305-0418. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

Timothy L Rude
Examiner
Art Unit 2871

TLR
May 20, 2003


ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800